

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (CURRENTLY AMENDED) An image-capturing apparatus, comprising:

a first image-capturing unit having a first image-capturing optical system; and

a second image-capturing unit having a second image-capturing optical system, the second image-capturing unit being detachably connected to the first image-capturing unit in a multi-lens camera mode;

wherein the first image-capturing unit is an electronic camera, said first image-capturing unit comprising:

joint holes for connecting with joints of the second image-capturing unit, and

an interface for transmitting data between the first image-capturing unit and the second image-capturing unit, wherein the interface can also accommodate writing and reading data to and from an external storage device detachably connected to the electronic camera when the image capturing apparatus is not in a multi-lens camera mode,

wherein each of the first and second image-capturing optical systems comprises a zoom lens; and

the image-capturing apparatus further comprises a lens controller for driving the zoom lenses of the first and second image-capturing optical systems to equalize zooming magnifications of the first and second image-capturing optical systems,

wherein said first and second image-capturing units cooperatively provide at least one of a panoramic imaging mode and a three-dimensional imaging mode when operatively connected in the multi-lens camera mode, and

wherein full image data from both the first and second image-capturing units are captured simultaneously and the simultaneously captured image data are stored while in the multi-lens camera mode.

2. (WITHDRAWN) The image-capturing apparatus as defined in claim 1, wherein the second image-capturing unit has a connecting part capable of detachably connecting to a third image-capturing unit having a third image-capturing optical system.

3. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 1, further comprising:

a connection detector for detecting that the first image-capturing unit is connected to at least the second image-capturing unit; and

a controller for synchronizing or interlocking image-capturing operation of the first image-capturing unit and at least the second image-capturing unit.

4. (WITHDRAWN) The image-capturing apparatus as defined in claim 1, further comprising at least one of:

a lens interval changer for adjusting an interval between the first and second image-capturing optical systems; and

a optical axis angle changer for adjusting an angle of an optical axis of the second image-capturing optical system with respect to an optical axis of the first image-capturing optical system.

5. (ORIGINAL) The image-capturing apparatus as defined in claim 1, wherein each of the first and second image-capturing units has a power source.

6. (ORIGINAL) The image-capturing apparatus as defined in claim 1, further comprising:

a power supplying device for supplying power from a power source of the first image-capturing unit to at least the second image-capturing unit.

7. (ORIGINAL) The image-capturing apparatus as defined in claim 1, wherein the second image-capturing unit records an image at the same time as the first image-capturing unit does in synchronism with an image-recording start signal outputted from the first image-capturing unit.

8. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 1, wherein an image capture timing of the second image-capturing unit is offset from a reference image capture timing of the first image-capturing unit by a predetermined time to thereby continuously capture images with the first and second image-capturing units when in continuous image-capturing mode.

9. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 1, wherein the first image-capturing unit comprises at least one of:

an AE device for measuring an AE value for controlling automatic exposure;

an AWB device for measuring an AWB value for automatically controlling white balance; and

an AF device for measuring an AF value for automatically controlling a focal point;

wherein the first image-capturing unit automatically controls at least one of the exposure, the white balance and the focal point in accordance with said at least one of the AE value, the AWB value and the AF value obtained by the first image-capturing unit.

10. (CURRENTLY AMENDED) The image-capturing apparatus as defined in claim 9, wherein the second image-capturing unit comprises at least one of:

an AE device for measuring an AE value, separate from the AE device of the first image-capturing unit, for controlling automatic exposure;

an AWB device for measuring an AWB value, separate from the AWB device of the first image-capturing unit, for automatically controlling white balance; and

an AF device for measuring an AF value, separate from the AF device of the first image-capturing unit, for automatically controlling a focal point;

wherein the first image-capturing unit and the second image-capturing unit share measuring operations and measured results.

11. (CANCELLED)

12. (CURRENTLY AMENDED) The image-capturing apparatus as defined in claim 1, wherein each of the first and second image-capturing optical systems comprises a non-contact communication device for transmitting information between the first image-capturing unit and the second image-capturing unit by using electromagnetic waves including image data from the second image-capturing unit to the first image-capturing unit.

13. (CANCELLED)

14. (CURRENTLY AMENDED) The electronic camera as defined in claim 1, wherein ~~an~~ the external storage device is detachably attached to the electronic camera through a slot.

15. (PREVIOUSLY PRESENTED) An image-capturing unit capable of being detachably attached to the electronic camera of claim 1, the image-capturing unit comprising:

an imaging part including an imaging device for converting a light from a subject into an electric signal, the imaging part being constructed in the same

manner as the image-capturing optical system loaded in the electronic camera;
and

a joint capable of jointing with a connecting part of the electronic camera.

16. (WITHDRAWN) The image-capturing unit of claim 15, further comprising:

a second connecting part to which a third image-capturing unit is connected; and

a third information transmission part for transmitting data between the second image-capturing unit and the third image-capturing unit connected to the second image-capturing unit through the second connecting part.

17. (WITHDRAWN) An electronic flash unit capable of being detachably attached to the electronic camera of claim 1, the electronic flash unit flashes in response to an image-recording start signal outputted from the first image-capturing unit.

18. (ORIGINAL) The image-capturing apparatus as defined in claim 1, wherein each of the first and second image-capturing units comprises an

imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image.

19. (WITHDRAWN) The image-capturing apparatus as defined in claim 18, further comprising:

an image position adjuster for adjusting a position of an image captured by the second image-capturing unit with respect to a position of an image captured by the first image-capturing unit.

20. (WITHDRAWN) The image-capturing apparatus as defined in claim 18, further comprising:

an image display; and

an adjusting device for displaying, on the image display, the image captured by the first image-capturing optical system and the image captured by the second image-capturing optical system to overlap one another, the adjusting device adjusting at least one of an image extracting position and an image extracting angle of the second image-capturing optical system.

21. (WITHDRAWN) The image-capturing apparatus as defined in claim 20, further comprising a storage device for storing an amount adjusted by the adjusting device.

22. (WITHDRAWN) The image-capturing apparatus as defined in claim 18, further comprising:

an image display; and

an adjusting device for displaying, on the image display, the image captured by the first image-capturing optical system and the image captured by the second image-capturing optical system to overlap one another, the adjusting device adjusting a direction of an optical axis of the second image-capturing optical system.

23. (ORIGINAL) The image-capturing apparatus as defined in claim 18, wherein the second image-capturing unit comprises a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

24. (ORIGINAL) The image-capturing apparatus as defined in claim 18, further comprising:

an image display having a parallax barrier display layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and

a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shaped image fragments representing a plurality of images are arranged in order;

wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed.

25. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 18, wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image.

26. (ORIGINAL) The image-capturing apparatus as defined in claim 18, wherein depth distribution information is extracted from the images captured by the first and second image-capturing units to perform special effects for areas that are not at a predetermined image-capturing distance.

27. (ORIGINAL) The image-capturing apparatus as defined in claim 18, further comprising a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

28. (ORIGINAL) The image-capturing apparatus as defined in claim 18, further comprising a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file and automatically giving a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

29. (ORIGINAL) The image-capturing apparatus as defined in claim 18, further comprising a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the

separate image files, the file names indicating that the separate image files are related to one another.

30. (CURRENTLY AMENDED) An image-capturing apparatus, comprising:

a first image-capturing unit having a first image-capturing optical system; and

a second image-capturing unit having a second image-capturing optical system, the second image-capturing unit being detachably connected to the first image-capturing unit in a multi-lens camera mode;

wherein the second image-capturing unit is connected with the first image-capturing unit, so that the first image-capturing unit and the second image-capturing unit are controlled in accordance with image information obtained by the first image-capturing unit and the second image-capturing unit,

wherein the first image-capturing unit comprises a first connecting part that mechanically and directly connects a second connecting part of the second image-capturing unit so as to form a single unit, wherein the first connecting part is such that an external storage device can be detachably connected to the first image-capturing unit when the second image-capturing unit is not connected to the first image-capturing unit.

wherein said first and second image-capturing units cooperatively provide at least one of a panoramic imaging mode and a three-dimensional imaging mode when operatively connected in the multi-lens camera mode, and

wherein full image data from both the first and second image-capturing units are captured simultaneously and the simultaneously captured image data are stored while in the multi-lens camera mode.

31. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 30, wherein each of the first and second image-capturing units comprises an imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image.

32. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, wherein the second image-capturing unit comprises a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

33. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, further comprising:

an image display having a parallax barrier display layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and

a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shaped image fragments representing a plurality of images are arranged in order;

wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed.

34. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image.

35. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, wherein depth distribution information is extracted from the images captured by the first and second image-capturing units to perform special effects for areas that are not at a predetermined image-capturing distance.

36. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, further comprising a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

37. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, further comprising a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file and automatically giving a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

38. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 31, further comprising a file manager for recording a sequence

of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the separate image files, the file names indicating that the separate image files are related to one another.

39. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 1, wherein in the panoramic imaging mode, an optical axis of the second image-capturing unit is inclined outside of an optical axis of the first image-capturing unit.

40. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 1, wherein the first and second image-capturing units cooperatively provide both of the panoramic imaging mode and the three-dimensional imaging mode when operatively connected in the multi-lens camera mode.

41. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 30, wherein in the panoramic imaging mode, an optical axis of the second image-capturing unit is inclined outside of an optical axis of the first image-capturing unit.

42. (PREVIOUSLY PRESENTED) The image-capturing apparatus as defined in claim 30, wherein the first and second image-capturing units cooperatively provide both of the panoramic imaging mode and the three-dimensional imaging mode when operatively connected in the multi-lens camera mode.

43. (NEW) The image-capturing apparatus as defined in claim 1, wherein the second image-capturing unit includes an interface capable of transmitting data to and from a third-image capturing unit when the third-image capturing unit is detachably attached to the second image-capturing unit and capable of transmitting data to and from the external storage device detachably attached when the third image-capturing unit is not attached to the second image-capturing unit.

44. (NEW) The image-capturing apparatus as defined in claim 30, wherein the second image-capturing unit includes a third connecting part capable of being used to connect with a third-image capturing unit when the third-image capturing unit is detachably attached to the second image-capturing unit and capable of being used to connect with the external storage

device when the third-image capturing unit is not attached to the second image-capturing unit.

45. (NEW) The image-capturing apparatus as defined in claim 1, wherein the second image-capturing unit includes a lens part that is horizontally slidable or horizontally rotatable or both.

46. (NEW) The image-capturing apparatus as defined in claim 30, wherein the second image-capturing unit includes a lens part that is horizontally slidable or horizontally rotatable or both.

47. (NEW) The image-capturing apparatus as defined in claim 1, wherein the first image-capturing unit includes a first control CPU configured to control operations of the first image-capturing optical system, and

wherein the second image-capturing unit includes a second control CPU, separate from the first control CPU, configured to control operations of the second image-capturing optical system in accordance with information provided from the first control CPU.

48. (NEW) The image-capturing apparatus as defined in claim 47, wherein the first control CPU is configured to directly control operations of the second image-capturing optical system without involvement from the second control CPU.

49. (NEW) The image-capturing apparatus as defined in claim 30, wherein the first image-capturing unit includes a first control CPU configured to control operations of the first image-capturing optical system, and

wherein the second image-capturing unit includes a second control CPU, separate from the first control CPU, configured to control operations of the second image-capturing optical system in accordance with information provided from the first control CPU.

50. (NEW) The image-capturing apparatus as defined in claim 49, wherein the first control CPU is configured to directly control operations of the second image-capturing optical system without involvement from the second control CPU.